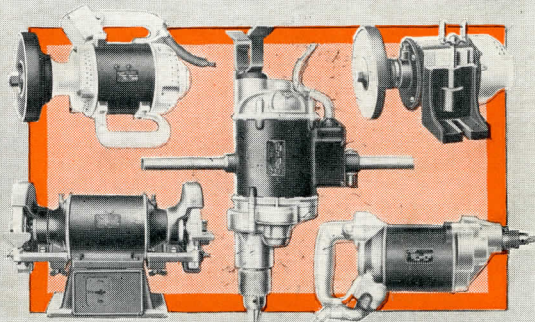


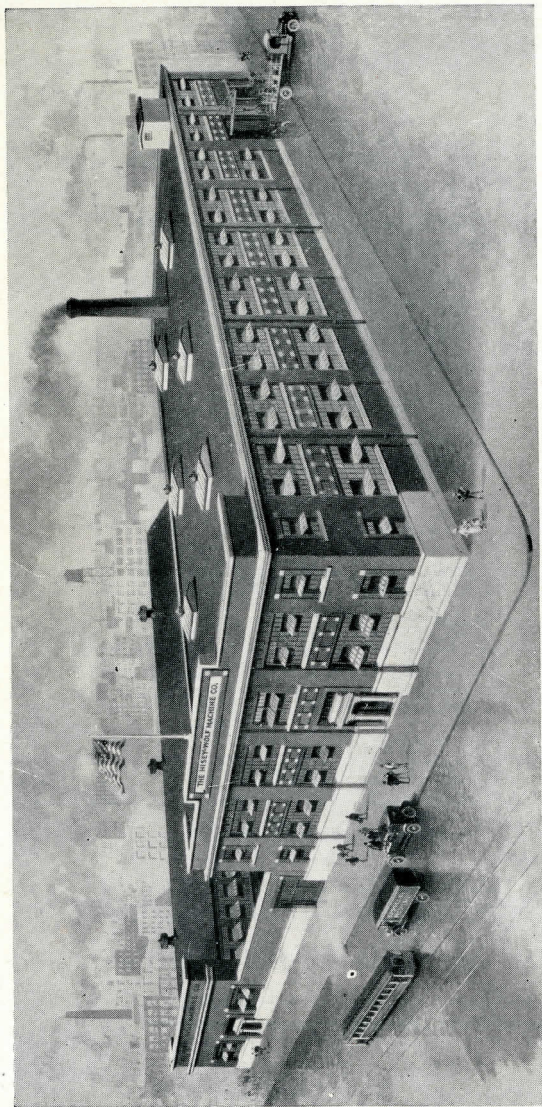
# "Hisey"

## Portable Electric Tools *for All Purposes*



*Have been used throughout  
the world for a quarter of  
a century. There's a Reason  
Look into the construction.*

BOTWINIK BROTHERS,  
67 WATER STREET,  
NEW HAVEN, CONN.



Plant of THE HISEY-WOLF MACHINE CO., Cincinnati, Ohio—Established 1896  
Manufacturers of the most complete line of High Grade Portable Electric Tools, Drills, Grinders, Reamers, Buffers, Screw Drivers, Etc.

## Electric Drills and Reamers

are shown and described on pages 4 to 13.

Electric Screw Driver shown on page 14.

Radial Drills and Drilling Stands shown on pages 15 to 19.

**Utility** These machines are designed to give the greatest efficiency for drilling and reaming operations. Capacities as given for drilling in steel are correspondingly higher for softer metals and for some classes of wood boring.

**The Motor** a most important component, is of our own design and manufacture in contrast to the stock power motors used in many assembled Electric Tools.

**Motor Shaft** This main driving member is heavier than in other drills of same capacity which feature tends to reduce vibration, thereby prolonging life of machine.

**Bearings** The highest grade Ball Bearings are used. All Universal Motor Drills and Direct Current Drills and Reamers up to  $\frac{7}{8}$ -inch capacity, are equipped with Ball Bearings throughout (including every spindle in the gear case), and mounted in accordance with the best engineering practice.

This advanced form of construction requires little explanation as the Engineer and Mechanic of today realizes the importance and many advantages of Ball Bearings as compared with the short life of Bronze Bearings now only used as a manufacturing economy.

This construction increases the durability of HISEY Drills and Reamers and reduces friction to a minimum.

**Ventilation** (a patent pending feature), is scientifically applied.

The vent openings in  $\frac{3}{8}$ -inch and larger Universal Drills and Direct Current Drills and Reamers up to  $\frac{7}{8}$ -inch capacity at the handle end of the machine are so placed that all the cool incoming air must pass over the commutator and brushes before being drawn through the motor and expelled. They are not ordinary perforations, which dust and grease will clog, but are designed to give maximum protection to the motor and other interior parts against accidental and wilful abuse.

**Cable Connector** is a most important feature. This new external connector in all HISEY Hand and Breast Drills permits cable repairs and renewals without dismantling the machine, thereby eliminating the loss of time and inconvenience common with other electric drills.

**Accessibility** in HISEY Drills and Reamers and can only be appreciated by taking a machine apart. This important feature greatly reduces maintenance costs.

**Switch** Each machine is equipped with a HISEY Switch of size and type best adapted for the purpose. The semi-automatic switch as used on large Drills and Reamers is so constructed to open automatically when the trigger is released. These instantaneous patented switches practically eliminate arcing and fusing of contacts so common in most other makes.

**Gears** Are made of High Grade steel accurately machined and carefully treated to secure toughness and long life.

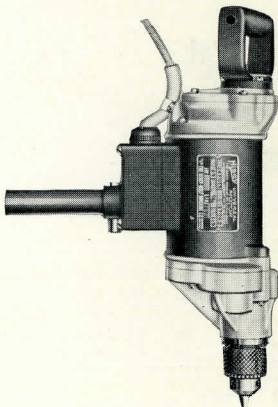
**Lubrication** All bearings, gears and other moving parts in the gear end of the machine are supplied from the gear transmission case. Ball Bearing on top head is packed with grease.



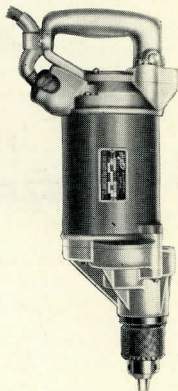
## Universal Motor Hand Drills

Ball Bearing Equipped Throughout

Will operate on Alternating Current and Direct Current  
of the same voltage



**Type 24KUH and  
24KUSX**



**Type 24KUH and  
24KUS**

Type	Volts	Cap. in Steel in Inches	Speed, R. P. M.		Net Weight, Pounds
			No Load	Normal Load	
24 KUH "	115 230	$\frac{5}{16}$	1475	900	12
24 KUSX "	115 230	$\frac{5}{16}$	1250	760	12
24 KUH "	115 230	$\frac{5}{16}$	1475	900	12
24 KUS "	115 230	$\frac{5}{16}$	1250	760	12

The above listed machines are standard and usually carried in stock.

They can be furnished to order for special voltage from 32 volts to 250 volts.

**Regular Equipment**—Each of the above machines is supplied with 15 feet electrical conductor cable fitted with attaching plug and Jacobs Drill Chuck for holding straight round shank drills from 0 to  $\frac{1}{4}$ -inch diameter.

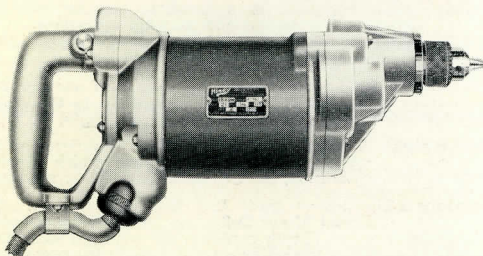
**General Service Recommendations**—See Page 4



## Universal Motor Hand Drills

Ball Bearing Equipped Throughout

Will operate on Alternating Current and Direct Current  
of the same voltage



Type	Volts	Cap. in Steel in Inches	Speed, R. P. M.		Net Weight, Pounds
			No Load	Normal Load	
18 KUH "	115 230	¼	2000	1200	9
18 KUM "	115 230	¼	1650	1000	9
18 KUS "	115 230	¼	1400	850	9

The above listed machines are standard and usually carried in stock.

They can be furnished to order for special voltage from 32 volts to 250 volts.

**Regular Equipment**—Each of the above machines is supplied with 15 feet electrical conductor cable fitted with attaching plug and Jacobs Drill Chuck for holding straight round shank drills from 0 to ¼-inch diameter.

### General Service Recommendations

Type 18KUH—For light drilling where maximum speed is desired.

Type 18KUM—For drilling sheet metal, brass and aluminum, also for wood boring.

Type 18KUS —For drilling very hard metals where a slow speed is often preferred.

### General Service Recommendations for Machines described on page 5.

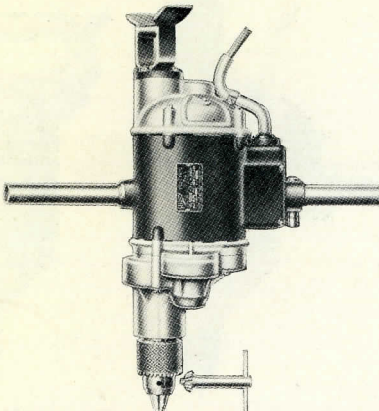
Type 24KUH<sub>X</sub> and 24KUH—For metal drilling and wood boring. Adapted to Automobile Body work and Car Building.

Type 24KUS<sub>X</sub> and 24KUS —For drilling very hard metals where a slow speed is often preferred.

## Universal Motor Drills

Ball Bearing Equipped Throughout

Will operate on Alternating Current and Direct Current  
of the same voltage



Type	Volts	Cap. in Steel in Inches	Speed, R. P. M.		Net Weight, Pounds
			No Load	Normal Load	
38 KU "	115 230	$\frac{3}{8}$	840	440	18
38 KUS "	115 230	$\frac{1}{2}$	840	390	19
50 KU "	115 230	$\frac{1}{2}$	800	350	22
58 KU "	115 230	$\frac{5}{8}$	775	320	24

The above listed machines are standard and carried in stock.

They can be furnished to order for special voltage from 32 volts to 250 volts.

**Regular Equipment**—Each of the above machines is supplied with 15 feet electrical conductor cable fitted with attaching plug and Jacobs Drill Chuck for holding straight round shank drills from 0 to maximum capacity of machine.

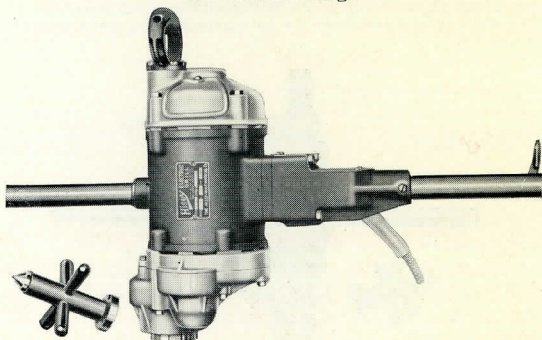
NOTE—No. 1 Morse Taper Socket (instead of chuck) can be furnished to special order at regular price.

**General Service Recommendations—See Page 7**

## Universal Motor Drills

Ball Bearing Equipped Throughout

Will operate on Alternating Current and Direct Current  
of the same voltage



Type	Volts	Cap. in Steel in Inches		Speed, R. P. M.		Net Weight, Pounds
		Drill- ing	Ream- ing	No Load	Normal Load	
78 RU "	115 230	$\frac{7}{8}$	$\frac{11}{16}$	600	300	38
125 RU "	115 230	$1\frac{1}{4}$	$\frac{3}{16}$	400	225	43

The above machines are standard and carried in stock.

They can be furnished to order for special voltage from 80 volts to 250 volts.

**Regular Equipment**—Each of the above machines is supplied with screw feed attachment, end spade handle, 15 feet electrical conductor cable and attaching plug. Type 78RU is fitted with No. 2 Morse Taper Socket. Type 125RU is supplied with No. 3 Socket.

### General Service Recommendations

Heavy duty machines for all around production drilling in wood and metal. Type 78RU is adapted for millwright and construction work also light  $\frac{11}{16}$ -inch reaming. Type 125RU is also suitable for light  $\frac{3}{16}$ -inch reaming.

### General Service Recommendations for Machines described on page 6.

Type 38KU —A production machine for heavy drilling in steel and cast iron.

Type 38KUS—An ideal machine for garage and auto repair work. A sturdy light weight drill guaranteed for the service.

Type 50KU —For general all around work. This Hisey  $\frac{1}{2}$ -inch Universal Drill is the standard for comparison.

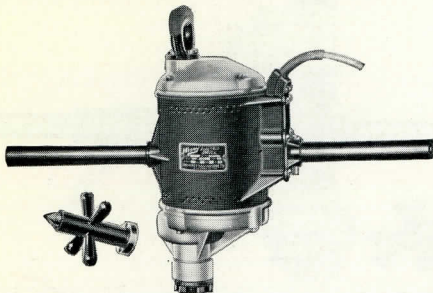
Type 58KU —For heavy drilling in steel and iron.



## Alternating Current Drills & Reamers

Ball Bearing Equipped  
For 60 Cycle Service

Single phase machines are for connecting to lamp socket.  
Three phase machines are for connecting to power circuit line wires.



Type	Volts and Phase	Cap. in Steel in Inches		Speed, R. P. M.		Net Wgt. Lbs.
		Drill- ing	Ream- ing	No Load	Normal Load	
75 RLA	110 v., 1 ph.					
"	220 " 1 "	$\frac{3}{4}$	$\frac{9}{16}$	225	210	40
"	220 " 3 "					
75 RRA	110 v., 1 ph.					
"	220 " 1 "	$\frac{3}{4}$	.....	225 and 430	210 and 410	45
"	220 " 3 "					
*75 RLMA	110 v., 1 ph.					
* " "	220 " 1 "	$\frac{3}{4}$	$\frac{9}{16}$	225	210	41
* " "	220 " 3 "					

The above listed machines are standard and carried in stock.

They can be furnished to order with motors for 42 cycle and 50 cycle service and for voltage from 80 volts to 440 volts, also for 2 phase service.

NOTE—For reaming 2 and 3 phase motor machines are recommended and given capacities are based upon these specifications.

\*Equipped with center spindle drive.

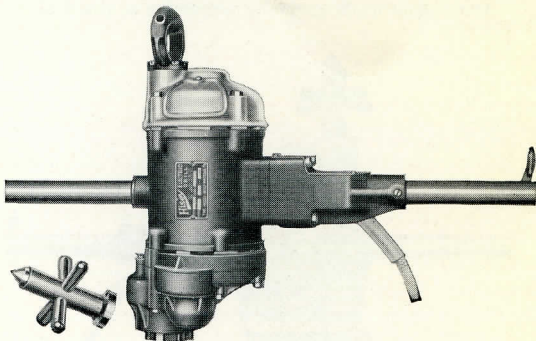
**Regular Equipment**—Same as listed on page 9.

### General Service Recommendations

Type 75RRA—**This two-speed machine** is a useful all around shop drill. Other types are for production drilling and reaming as listed.

## Direct Current Drills and Reamers

Ball Bearing Equipped Throughout



Type	Volts	Cap. in Steel in Inches		Speed, R. P. M.		Net Weight, Pounds
		Drill- ing	Ream- ing	No Load	Normal Load	
78 RD "	115 230	$\frac{7}{8}$	$1\frac{1}{8}$	600	280	43

The above listed machines are standard and usually carried in stock.

They can be furnished to order for special voltage from 80 volts to 550 volts.

**Regular Equipment**—Each of the above machines is supplied with screw feed attachment, end spade handle, 15 feet electrical conductor cable fitted with attaching plug and a removable No. 2 Morse Taper Socket.

**NOTE**—For Reamers with extra large shank, No. 3 Morse Taper Socket can be furnished to special order and when so equipped, machine is suitable for light drilling up to  $1\frac{1}{4}$  inches.

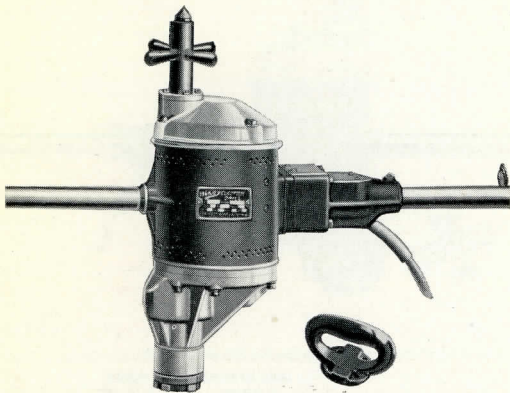
### General Service Recommendations

A sturdy light weight machine for all around production drilling in wood and metal. For all classes of  $\frac{1}{8}$ -inch reaming in car and structural work.

## Alternating Current Drills & Reamers

Ball Bearing Equipped  
For 60 Cycle Service

Single phase machines are for connecting to lamp socket.  
Three phase machines are for connecting to power circuit line wires.



Type	Volts and Phase	Cap. in Steel in Inches		Speed, R. P. M.		Net Wgt. Lbs.
		Drilling	Reaming	No Load	Normal Load	
125 RLA	110 v., 1 ph.					
"	220 " 1 "	1 1/4	1 5/16	185	170	65
"	220 " 3 "					
125 RRA	110 v., 1 ph.					
"	220 " 1 "	1 1/4	.....	185 and 350	170 and 330	69
"	220 " 3 "					
175 RLA	110 v., 1 ph.					
"	220 " 1 "	1 3/4	1 3/16	110	100	88
"	220 " 3 "					

The above listed machines are standard and carried in stock.

They can be furnished to order with motors for 42 cycle and 50 cycle service and for any voltage from 80 volts to 440 volts, also for two phase service.

NOTE—For reaming, 2 and 3 phase motor machines are recommended and given capacities are based upon these specifications.

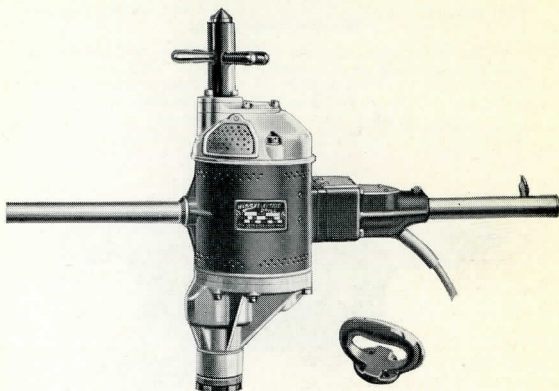
**Regular Equipment**—Same as listed on page 11.

**General Service Recommendations**—See Page 11



# Direct Current Drills and Reamers

Ball Bearing Equipped



Type	Volts	Cap. in Steel in Inches		Speed, R. P. M.		Net Weight, Pounds
		Drill- ing	Ream- ing	No Load	Normal Load	
125 RLD "	115 230	1 ¼	⅝	185	150	66
125 RRD "	115 230	1 ¼	.....	185 and 350	150 and 285	70

The above listed machines are standard and usually carried in stock.

They can be furnished to order for special voltage from 80 volts to 550 volts.

**Regular Equipment**—Each of the above machines is supplied with screw feed attachment, end spade handle, 15 feet electrical conductor cable, fitted with attaching plug and a removable No. 3 Morse Taper Socket.

Type 175RLA Alternating Current Drill is fitted with No. 4 Morse Taper Socket.

## General Service Recommendations

Type 125RLD—For heavy drilling in wood and metal, also for light ⅝-inch reaming.

Types 125RRD and 125RRA—**These two-speed machines** are particularly adapted for all around drilling in the shop and for construction work.

Type 125RLA—A production machine for heavy drilling in metal also for ⅝-inch reaming.

Type 125RLA—For drilling and reaming in car work, also ship building and locomotive work where a powerful yet portable machine is necessary.

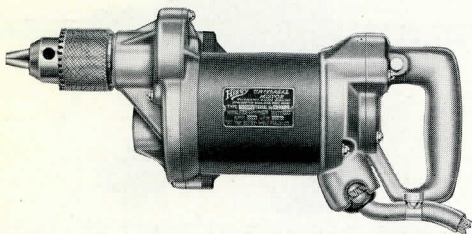
## Universal Motor Slate & Marble Drill

Ball Bearing Equipped Throughout

**Will operate on Alternating Current and Direct Current of the same voltage**

Unlike other materials, the drilling of Slate and Marble can only be accomplished at a very low speed. This new HISEY Drill operates at only 110 R. P. M. at no-load and has sufficient power for drilling up to  $\frac{1}{2}$ -inch diameter in Slate and Marble.

For metal drilling this slow speed is not very efficient. However, will do for many jobs not to exceed  $\frac{3}{8}$ -inch diameter.



**Drill Bits**—For Slate and Marble drilling, an ordinary carbon steel twist drill properly ground, is the best. The bit should always be ground with a straight face like a chisel. A bit ground straight across so that the cutting edge is at right angles to the sides, will bore true to size.

By grinding the cutting edge of the bit on a slant, the drilling size of any bit can be increased depending on the slant or angle at which it is ground.

Type	Volts	Drilling Capacity in Slate and Marble, in Inches	Speed, R. P. M.		Net Weight, Pounds
			No Load	Normal Load	
50 SMU	115	$\frac{1}{2}$	110	95	10
"	230				

The above listed machines are standard and usually carried in stock.

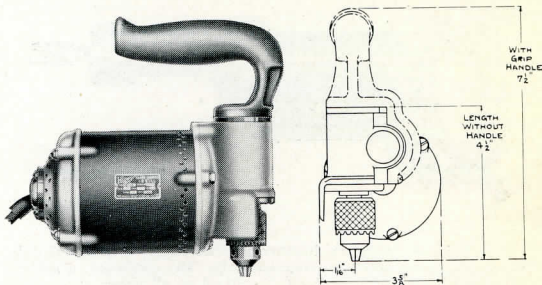
They can be furnished to order for special voltage from 32 volts to 250 volts.

**Regular Equipment**—Each of the above machines is supplied with 15 feet electrical conductor cable fitted with a suitable attaching plug and Jacobs Drill Chuck for holding straight round shank drills from 0 to  $\frac{1}{2}$ -inch diameter.

## Close Quarter Drill

Ball Bearing Equipped Throughout

Universal Motor for operation on Alternating Current  
and Direct Current of the same voltage



The very compact yet convenient design of this new HISEY Drill adds to the adaptability for close quarter work.

Dimensions above show working space required and corner working limits.

When used with or without grip handle the machine can be conveniently held and operated with one hand, thereby leaving the other hand free to hold the work.

Type	Volts	Capacity in Steel in Inches	Speed, R. P. M.		Net Weight, Pounds
			No Load	Normal Load	
18 KAU "	115 230	1/4	1700	1200	6 1/2

The above listed machines are standard and usually carried in stock.

They can be furnished to order for special voltage from 32 volts to 250 volts.

**Regular Equipment**—Each of the above machines is supplied with a detachable grip handle, 15 feet electrical conductor cable fitted with attaching plug and Jacobs Drill Chuck for holding straight round shank drills from 0 to 1/4-inch diameter.

### General Service Recommendations

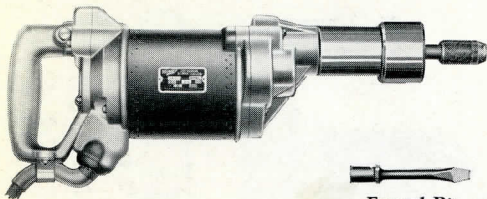
This machine is particularly adapted for the many difficult drilling and countersinking operations in Auto Body, Cabinet and Coach Work.



## Friction Head Screw Driver

Ball Bearing Equipped Throughout

Universal Motor for operation on Alternating Current  
and Direct Current of the same voltage



Forged Bit

Is equipped with an improved Disc Type friction clutch which is automatically regulated by the pressure applied, thereby giving the operator full control at all times.

The clutch casing is of convenient size and serves as an end grip when the work requires.

The Screw Slot finding attachment shown is supplied to special order only. It is a great time saver and obviates the driving bit from slipping out of the screw slot and marring the surface of the work.

The forged type bit is standard equipment and is often preferred for miscellaneous work where finish is not so important.

The motor and clutch unit is equally proportioned to effectively drive No. 14 wood screws  $2\frac{1}{2}$  inches long in soft **solid wood** and larger sizes when lead holes are provided.

With the proper socket this machine is equally as practical for setting nuts up to  $\frac{3}{8}$ -inch in metal and wood work construction.

Type	Volts	Capacity		Speed, R. P. M.		Net Weight, Pounds
		Screws	Nuts	No Load	Normal Load	
3 QSU	115 230	$2\frac{1}{2}$ inch No. 14	$\frac{3}{8}$ inch	525	390	$9\frac{1}{2}$

The above listed machines are standard and usually carried in stock.

They can be furnished to order for special voltage from 32 volts to 250 volts.

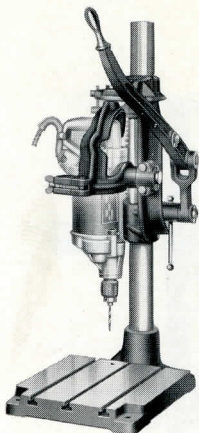
**Regular Equipment**—Includes one forged driving bit and 15 feet conductor cable.

**NOTE**—Screw Slot finding attachments and Nut sockets furnished to specification.

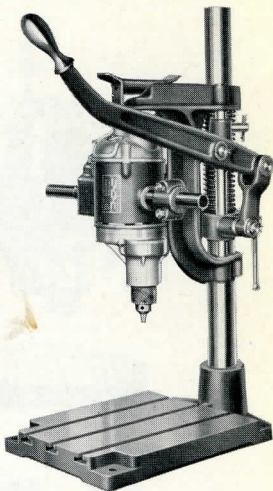
## No. 1-P—Bench Drilling Stand

With Lever Feed

This stand is designed to hold all HISEY Drills up to and including  $\frac{5}{8}$ -inch capacity.



**Showing Adapter  
Bracket for use with  
Small Hand Drills**



This Drilling Stand is a very convenient accessory, for use in connection with an electrical drill. For garage work, general machine shop or repair shop, it makes a serviceable and accurate Bench Drill, greatly increasing the usefulness of a Portable Electric Drill, as it gives the benefit of two machines at a nominal additional cost.

This combination makes a portable, Sensitive Drill Press which can be operated from any lamp socket.

Stand is fitted with an adjustable depth drilling stop, which is a convenient feature when duplicating a lot of work.

It is so designed that the Drill can be attached without removing a single part of the machine. This HISEY feature is a great time saver and a protection against loss of parts.

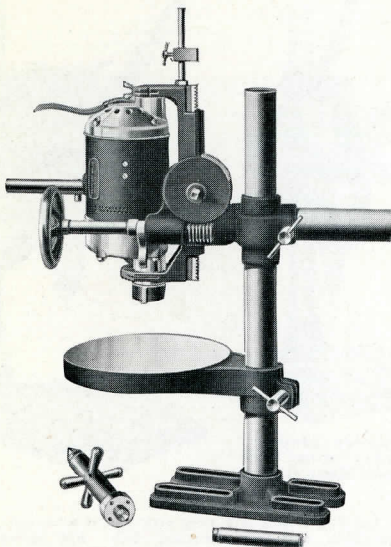
Length of Feed by Lever.....	4½ inches
Maximum Distance, Top of Base to Drill Chuck	17 "
Distance, Center of Drill Spindle to Column...	6½ "
Size of Base.....	12x11 "
Diameter of Column.....	2 "
Net Weight, Stand only.....	90 lbs.

**In ordering Drilling Stand separately (without Portable Drill), full name-plate markings of the Drill should be given.**

## No. 2—Bench Drilling Stand

With Hand Wheel and Worm Feed

This stand is designed for all  $\frac{3}{4}$ -inch,  $\frac{7}{8}$ -inch and 1-inch capacity HISEY Electric Drills described herein.



The worm feed operating through rack and pinion makes heavy drilling easy.

To quickly elevate motor drilling head the worm is disengaged from the worm gear by an eccentric lever provided for the purpose.

Holes can be drilled at any angle as the motor drilling head can be swung in a complete circle parallel to the main column.

This stand with the many universal adjustments makes a most practical machine for shop and construction work.

Length of Feed, Motor Bracket in Slide.....	12	inches,
Max. Distance, Top of Table to Drill Stand..	19½	"
Distance, Center of Drill Spindle to Column..	9 to 16	"
Diameter of Column.....	2 13/16	"
Net Weight, Stand only.....	170	lbs.

In ordering Drilling Stand separately (without Portable Drill), full name-plate markings of the Drill should be given.

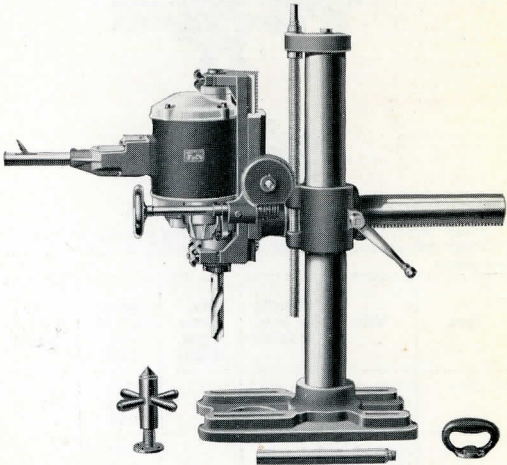


## No. 3—Radial Drill Stand

### Full Universal with Hand Wheel and Worm Feed

This stand is designed for portable drills of the larger sizes as shown and described on pages 10 and 11.

It is particularly adapted for use with a **two-speed** 1 1/4-inch capacity drill, and when so equipped offers all the advantages of a self-contained Scotch Radial Drill plus the use of the Drill proper for portable service when so necessary.



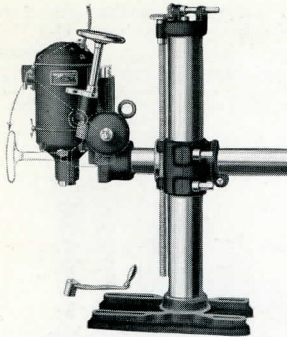
The columns are made of seamless steel tubing, with rack and pinion horizontal adjustment and a vertical adjustment by means of screw. The feed is controlled by the handwheel, and provided with quick return by crank. Machine can be operated at any angle. Handwheel and worm box may be operated in either horizontal or vertical position, permitting use of drill in corners and close places. All adjustments are mechanical and positive and can be made accurately and quickly, and are always under operator's control.

Length of Feed, Motor Bracket in Slide.....	10 3/4 inches
Max. Distance, Base to Drill Socket.....	22 "
Distance, Center of Drill Socket to Column. 9 1/2 to 20 1/2 "	"
Diameter of Main Column.....	3 1/8 "
Net Weight, Radial Drill Stand only.....	1225 lbs.

**In ordering Radial Drill Stand separately (without Portable Drill), full name-plate markings of the Drill should be given.**

# Portable Electric Scotch Radial Drills

Ball Bearing Equipped



## 60 Cycle Alternating Current

Single phase machines are for connecting to lamp socket.

Three phase machines are for connecting to power circuit line wires.

Type	Volts	Capacity in Steel, in Inches	No. Morse Taper Socket	Speeds, R. P. M. No Load	Net Weight, Pounds
NA	110v., 1 ph.	$\frac{7}{8}$	2	<b>215</b> and <b>370</b>	150
"	220 " 1 "				
"	220 " 3 "				
NNA	110v., 1 ph.	$1\frac{1}{4}$	3	<b>150</b> and <b>260</b>	300
"	220 " 1 "				
"	220 " 3 "				

## Direct Current

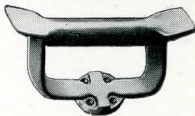
N	115 230	$\frac{7}{8}$	2	<b>215</b> and <b>370</b>	150
NN	115 230	$1\frac{1}{4}$	3	<b>150</b> and <b>260</b>	300

**Alternating Current** machines can be furnished to order with motors for 42 cycle and 50 cycle service and for any voltage from 80 volts to 440 volts, also for two phase service.

**Direct Current**—Type N can be furnished for special voltage from 80 volts to 250 volts. Type NN, for special voltage from 80 volts to 550 volts.

**Regular Equipment**—Each of the above machines is supplied with 10 feet electric conductor cable with suitable attaching plug, Morse Taper drill socket and crank handle.

## Electric Drill Attachments and Accessories



**No. 13—Spade Handle** is regularly supplied with all Drills, unless otherwise ordered.



**No. 12—Breast Plate.** This attachment is interchangeable with the end or spade handle shown on the various drills and is sometimes preferred, especially where no overhead work is done.



This Flexible Shaft Attachment fitted with shank for holding grinding wheel, is very convenient for many light grinding jobs, such as cleaning metal patterns, etc. When shaft is supplied with drill chuck, it is equally as useful for many kinds drilling jobs.

**No. 10—Shaft Attachment** with  $\frac{1}{4}$ -inch capacity chuck.

**No. 11—Shaft Attachment** with 3 by  $\frac{3}{8}$ -inch face wheel.

**Shaft Attachment** can be supplied with both chuck and grinding wheel, which are interchangeable.

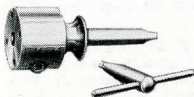


**No. 16—Grinding Wheel Attachment** is a convenient accessory for use in connection with an Electric Drill. Where a limited amount of grinding is required, particularly when out on a job, such as sharpening drills, smoothing welded surfaces and uneven laps of sheet metal work,

this attachment will be found of great value. Made in two sizes: Small size, with  $4\frac{1}{2} \times 1\frac{1}{2}$ -in. face wheel; large size, with  $6 \times \frac{3}{4}$ -in. face wheel. Recommended for  $\frac{3}{8}$ -inch drills and larger.



**No. 14—Screw Feed** is a handy attachment when working in trench ways or other limited quarters, also allows greater efficiency when multiple drilling is required. The telescopic design, with 3-inch maximum length of travel, adds to the adaptability.



**No. 17—Detachable Drill Chuck** for holding straight round shank drills from 0 to listed capacity, is fitted with Morse Taper Shank to fit socket of the machine.  $\frac{1}{2}$ -inch and  $\frac{3}{4}$ -inch sizes, with taper shank.

In ordering any of the above parts, give full name-plate markings of the machine for which they are required.

## Grinding and Buffing Machines

Bench and Floor Grinders shown on pages 21 to 27.

Bench and Floor Buffing Lathes shown on pages 28 to 34.

**Bearings** High Grade Ball Bearings are used throughout mounted in motor end caps in closest proximity to the wheels. The practical construction of the bearing housings permitting correct mounting, greatly increases the efficiency of these Ball Bearing Machines.

All Bearings are completely enclosed from dust and grit and provided with heavy felt protector washers on each side of bearing housing.

**Quality and Quantity of Work** proportionately share with this advanced line of HISEY Machines. With a rigidly supported and truly running wheel a more uniform finish (not wavy) is obtained with less application of the work to the wheel as compared with a worn or poorly adjusted plain bearing.

**Motor Starter** is far superior to the ordinary type of switch. This is a most important feature, worthy of careful consideration, as it gives maximum protection to motor from overload when starting and while running.

The operating or control button is conveniently located in front of the machine with the switch proper completely enclosed in the base. This mounting insures the best possible protection and permits ready access to all the switch mechanism by simply removing the cover plate; no motor parts need be disturbed.

**Spindles** are designed proportionately heavy. They are of one-piece construction and made of high-grade steel accurately ground.

**Wheel Mounting** All wheels are fitted directly on the spindle. Arbor diameters on which the wheels are mounted are of Standard dimensions as recommended by the A. S. M. E.

**Flange Washers** of liberal size are used. They are machined all over and correspond to other balanced parts entering the construction of HISEY products. All inner flanges are firmly keyed to the spindle, but can easily be removed by hand when desired.

**Lubricate Bearings** once a week. Use chemically neutral oil only to insure the longest possible life to ball bearings. Felt packing in the oil chambers holds all surplus lubricant and prevents any foreign matter from entering the bearings.

**Adjustment** of bearings is seldom necessary, as they are firmly locked on the motor shaft. When assembling, care should be taken to have all parts free from dirt and grit.

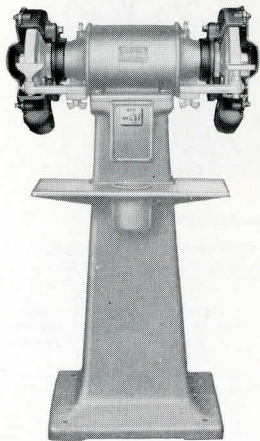
**Wheel Guards** for all Grinders are of standard dimensions and specifications as recommended by American Engineering Standards Committee, and insure the best possible protection. They are adjustable, and so designed that the wheels can be removed independently.

Full Safety Combination Wheel Guards, page 21.

**Adjustable Eye Shields** shown and described on page 27.

## Full Safety Combination Wheel Guards

Patent Pending



### Full Safety Combination Wheel Guards

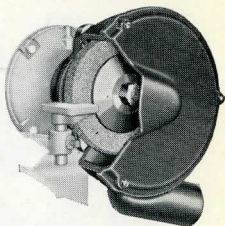
shown above are interchangeable with standard open-type guards. They are fitted with removable end covers and exhaust pipe connections, and are of dimensions and specifications as recommended by American Engineering Standards Committee. They are adjustable to any angle, making them adaptable to all variations of the work.

As the grinding wheel wears, the guard proper is adjustable (moved back), on the support bracket, thereby giving full access to the grinding wheel with maximum guard protection.

**Combination guards can be supplied to special order for all HISEY Bench and Floor Grinders described in this catalog.**

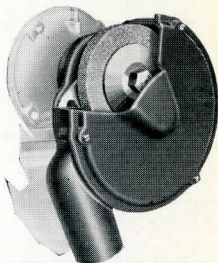
#### Code Word

Puhow	Set of two combination guards for $\frac{1}{2}$ H. P. grinder
Pukad	Set of two combination guards for 1 H. P. grinder
Pulos	Set of two combination guards for 2 H. P. grinder
Pumit	Set of two combination guards for 3 H. P. grinder



End view showing guard protection after a 10-inch diameter wheel has worn to 5 inches.

Note that top of the guard is always nearest the wheel to serve as a spark and chip breaker.

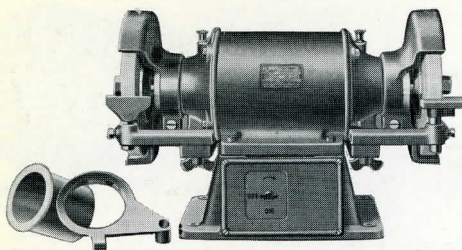


End view, showing angular adjustment of combination guard.



## Bench Grinding Machines

### Ball Bearing Equipped



### 60 Cycle Alternating Current

Single phase machines are for connecting to lamp socket.  
Three phase machines are for connecting to power lines.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheels in Inches	Net Weight, Pounds
2 WA " " "	110v., 1 ph. 220 " 1 " 220 " 3 "	1/4	3400	6x3/8	70
3 WA " " "	110v., 1 ph. 220 " 1 " 220 " 3 "	1/2	3400	8x3/4	95
4 WA " " "	110v., 1 ph. 220 " 1 " 220 " 3 "	1	1750	10x1	175

### Direct Current

2 WD	115 or 230	1/4	3400	6x3/8	70
3 WD	115 or 230	1/2	3000	8x3/4	90
4 WD	115 or 230	1	2100	10x1	173

Above listed machines are standard and carried in stock.

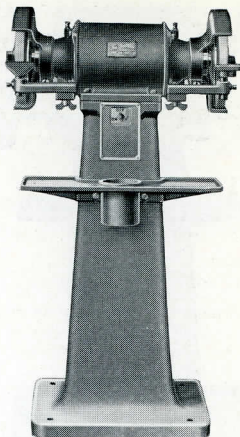
**Alternating Current** machines can be supplied to special order for any voltage from 80 volts to 550 volts, and for two phase service. Type 4WA can be furnished for any frequency (cycles) from 25 to 60 cycles.

**Direct Current** machines can be furnished for special voltage from 80 volts to 250 volts.

**Regular Equipment**—Two grinding wheels as listed, two adjustable wheel guards, reinforced electrical cable, detachable water pot, and **Safety Motor Starter**. Water pot not supplied with 1/4 H. P. Grinders.

## Floor Grinding Machines

Ball Bearing Equipped



### 60 Cycle Alternating Current

Single phase machines are for connecting to lamp socket.  
Three phase machines are for connecting to power circuit line wires.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheels in Inches	Net Weight, Pounds
3 WFA	110 v., 1 ph.	$\frac{1}{2}$	3400	8x $\frac{3}{4}$	260
"	220 " 1 "				
"	220 " 3 "				
4 WFA	110 v., 1 ph.	1	1750	10x1	370
"	220 " 1 "				
"	220 " 3 "				

### Direct Current

3 WFD	115	$\frac{1}{2}$	3000	8x $\frac{3}{4}$	255
"	230				
4 WFD	115	1	2100	10x1	365
"	230				

Above listed machines are standard and usually carried in stock.

**Alternating Current, Direct Current and Equipment Specifications**—Same as on page 22.

## Floor Grinding Machines

Ball Bearing Equipped



### 60 Cycle Alternating Current

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheel in Inches	Net Weight, Pounds
5 WFA	220v., 3 ph.	2	1750	12x1½	475
"	440 " 3 "				
6 WFA	220v., 3 ph.	3	1700	14x2	575
"	440 " 3 "				
6 WFA	110v. single	3	1700	14x2	590
"	220v. phase				

### Direct Current

5 WFD	115 or 230	2	1800	12x1½	525
6 WFD	115 or 230	3	1600	14x2	575

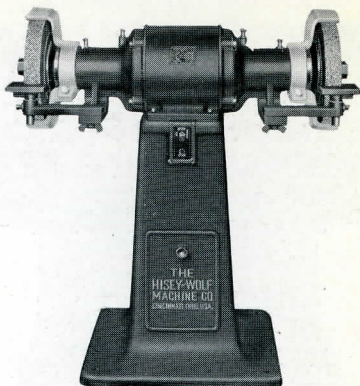
Above machines are standard and usually carried in stock. **Alternating Current** machines can be supplied for any voltage from 110 volts to 550 volts, and for two phase service. Type 6WFA can be furnished for any frequency (cycles) from 25 to 60 cycles.

**Direct Current** machines can be furnished for special higher voltage up to 550 volts.

**Regular Equipment**—Two adjustable wheel guards, connecting cable, water pot and **Automatic Motor Starter**.

## Wide Swing Floor Stand Grinders

Ball Bearing Equipped



### 60 Cycle Alternating Current

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheel in Inches	Net Weight, Pounds
6 WSA "	220v.. 3 ph. 440 " 3 "	3	1700	14x2	660
6 WSA "	110v.single 220v.phase	3	1700	14x2	675

### Direct Current

6 WSD	115 or 230	3	1600	14x2	660
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Above machines are standard and usually carried in stock.

**Alternating Current** machines can be supplied for any voltage from 110 volts to 550 volts. They can be furnished for two phase and for any frequency (cycles) from 25 to 60 cycles.

**Direct Current** machines can be furnished for special higher voltage up to 550 volts.

**Regular Equipment**—Two adjustable wheel guards, connecting cable and **Automatic Motor Starter**.

### General Service Recommendations

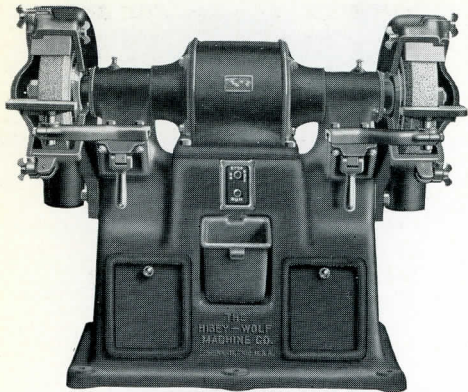
The wheels are of wide spacing (37 inches), to permit grinding of large, bulky castings and other irregular pieces.

This machine is particularly adapted for the many grinding operations in stove, furnace and heater work.

Buffing and wire brush wheels can also be used.

## Heavy Duty Floor Grinders

Ball Bearing Equipped



Alternating Current for 220 and 440 Volts  
and for 2 and 3 Phase

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheels in Inches	Net Weight, Pounds
7 WFA	60 cycles	6	1140	18x3	1600
"	25 "	6	1450	16x3	1600
8 WFA	60 cycles	7½	1140	20x4	1800
10 WFA	60 cycles	10	900	24x4	2675
"	25 "	10	750	24x4	2675

### Direct Current

7 WFD	230	6	1100	18x3	1650
8 WFD	230	7½	1100	20x4	1800
10 WFD	230	10	900	24x4	2700

Above listed machines are standard and usually carried in stock.

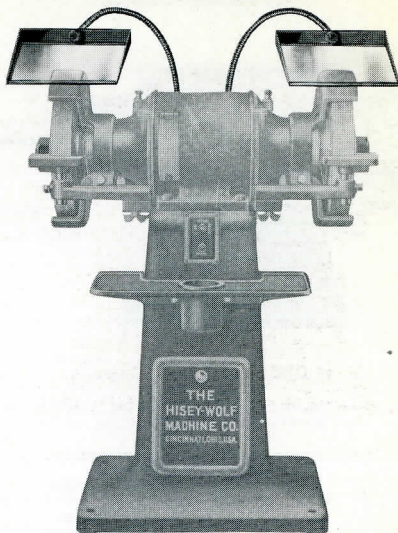
**Regular Equipment**—Combination wheel guards with exhaust pipe connections, tool grinding rests, water pot and **Automatic Motor Starter**.

### General Service Recommendations

Particularly adapted for Railroad Shops, Foundries, Ship Yards and any other grinding where power and dependability are essential.



## Adjustable Eye Shields



**Showing Application of Adjustable Eye Shields in 3 H. P. Grinder equipped with 14x2-inch wheels**

The heavy laminated glass plates commonly known as bullet-proof glass, will not shatter or splash when broken by an unusual hard blow.

It is 9 inches long by 7 inches wide and is held in a steel frame which can be detached when renewal is necessary.

The special flexible metal holder supporting the shield can be instantly adjusted by hand (without tools) to any desired position which convenient feature is the best assurance that the workman will always use the same.

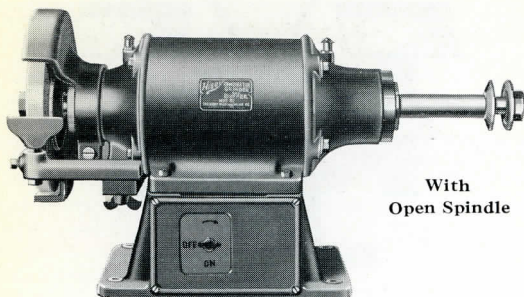
Unlike the workman's goggles, the eye shield is always in position ready for use and provides maximum protection from flying sparks and chips.

For Bench and Floor Type Grinding and Buffing machines, eye shields are furnished in sets of two and are supplied complete with the necessary adjustable clamps for attaching to the bolt holes in the motor base.

Although primarily designed for various types of grinding and buffing machines, the adjustable eye shield is equally efficient when used with Lathe, Planer or any other machine.

# Combination Grinder and Buffer

Ball Bearing Equipped



With  
Open Spindle

## 60 Cycle Alternating Current

Single phase machines are for connecting to lamp socket.

Three phase machines are for connecting to power circuit line wires.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheels in Inches	Net Weight, Pounds
3 CHA	110v., 1 ph.	$\frac{1}{2}$	3500	8x $\frac{3}{4}$	95
"	220 " 1 "				
"	220 " 3 "				
4 CHA	110v., 1 ph.	1	3500	8x1 $\frac{1}{2}$	175
"	220 " 1 "				
"	220 " 3 "				

## Direct Current

3 CHD	115 or 230	$\frac{1}{2}$	3500	8x $\frac{3}{4}$	90
4 CHD	115 or 230	1	3200	8x1 $\frac{1}{2}$	175

The above machines are standard and carried in stock.

**Alternating Current** machines can be furnished for special higher voltage up to 550 volts, and for two phase service. Type 4CHA can be furnished for any frequency from 25 to 60 cycles.

**Direct Current** machines can be furnished for special voltage from 80 volts to 250 volts.

**Regular Equipment**—Each of the above machines is supplied with connector cable, wheel guard, one grinding wheel and **Safety Motor Starter**. Wire brush wheel or buff wheel furnished to order.

## Combination Grinders and Buffers

Ball Bearing Equipped



With  
Encased  
Spindle

### 60 Cycle Alternating Current for Single and Three Phase

Single phase machines are for connecting to lamp socket.  
Three phase machines are for connecting to power lines.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheels in Inches	Net Weight, Pounds
3 CFA	110 or 220	$\frac{1}{2}$	3500	$8 \times \frac{3}{4}$	280
4 CFA	110 or 220	1	3500	$8 \times 1 \frac{1}{2}$	390

### Direct Current

3 CFD	115 or 230	$\frac{1}{2}$	3500	$8 \times \frac{3}{4}$	275
4 CFD	115 or 230	1	3200	$8 \times 1 \frac{1}{2}$	390

The above machines are standard and carried in stock.

**Alternating Current** machines can be furnished for special higher voltage up to 550 volts, and for two phase service. Type 4CFA can be furnished for any frequency from 25 to 60 cycles.

**Direct Current** machines can be furnished for special voltage from 80 volts to 250 volts.

**Regular Equipment**—Each of the above machines is supplied with connector cable, two wheel guards, one grinding wheel and **Safety Motor Starter**. Wire brush wheel, buff or rotary rasp wheel, furnished to order.

## Bench Buffing Lathes

Ball Bearing Equipped



### 60 Cycle Alternating Current

Single phase machines are for connecting to lamp socket.

Three phase machines are for connecting to power circuit line wires.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheels in Inches	Net Weight, Pounds
3 HA	110 v., 1 ph.	$\frac{1}{2}$	3500	6x $\frac{3}{4}$	85
"	220 " 1 "				
"	220 " 3 "				
4 HA	110 v., 1 ph.	1	3500	8x 1	160
"	220 " 1 "				
"	220 " 3 "				

### Direct Current

3 HD	115 230	$\frac{1}{2}$	3500	6x $\frac{3}{4}$	80
4 HD	115 230	1	3200	8x 1	160

Above listed machines are standard and usually carried in stock.

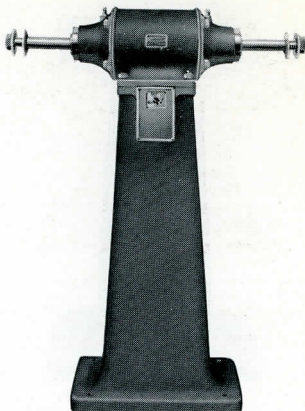
**Alternating Current** machines can be supplied to special order for any voltage from 80 volts to 550 volts, and for two phase service. Type 4 HA can be furnished for any frequency from 25 to 60 cycles.

**Direct Current** machines can be furnished for special voltage from 80 volts to 250 volts.

**Regular Equipment**—Each of the above machines is supplied with reinforced cable and **Safety Motor Starter**. Wheels furnished to order only.

## Floor Buffing Lathes

Ball Bearing Equipped



### 60 Cycle Alternating Current

Single phase machines are for connecting to lamp socket.

Three phase machines are for connecting to power circuit line wires.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheels in Inches	Net Weight, Pounds
3 HFA	110 v., 1 ph.	$\frac{1}{2}$	3500	6x $\frac{3}{4}$	240
“	220 “ 1 “				
“	220 “ 3 “				
4 HFA	110 v., 1 ph.	1	3500	8x 1	340
“	220 “ 1 “				
“	220 “ 3 “				

### Direct Current

3 HFD	115 230	$\frac{1}{2}$	3500	6x $\frac{3}{4}$	235
4 HFD	115 230	1	3200	8x 1	335

Above listed machines are standard and usually carried in stock.

**Alternating Current, Direct Current and Equipment Specifications**—Same as on page 30.



## Floor Buffing Lathes

Ball Bearing Equipped



### 60 Cycle Alternating Current

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheels in Inches	Net Weight, Pounds
5 HFA "	220 v., 3 ph. 440 " 3 "	2	1750 or 3500	10x1 ½	450
6 HFA "	220 v., 3 ph. 440 " 3 "	3	1750 or 3500	12x2	550

### Direct Current

5 HFD "	115 230	2	3000	10x1 ½	485
6 HFD "	115 230	3	2800	12x2	550

Above machines are standard and usually carried in stock.

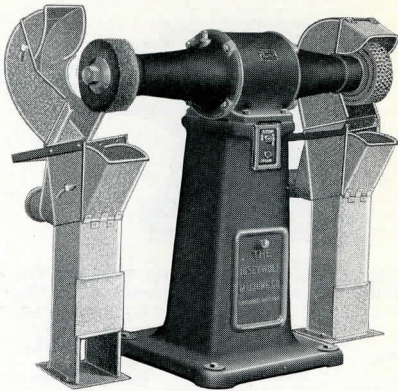
**Alternating Current** machines can be supplied for any voltage from 115 volts to 550 volts, and for two phase service. Type 6HFA can be furnished for any frequency from 25 to 60 cycles.

**Direct Current** machines can be furnished for special higher voltage up to 500 volts.

**Regular Equipment**—Each of the above machines is supplied with reinforced feed cable and **Automatic Motor Starter**. Wheels furnished to order only.

## Heavy Duty Floor Buffing Machines

Ball Bearing Equipped



Showing application of Dust Collecting Hood which can be supplied to order for all Buffing Machines.

Alternating Current for 60 Cycle, 3 Phase

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheels in Inches	Net Weight, Pounds
7 HFA	220 or 440	5	3500	8x3	575
8 HFA	220 or 440	7½	1800	18x3	775

### Direct Current

7 HFD	230 or 250	5	3000	8x3	575
8 HFD	230	7½	1800	18x3	775

Above machines are standard and usually carried in stock.

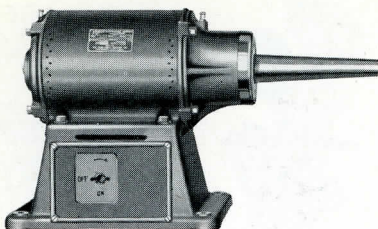
**Alternating Current** machines can be furnished for special higher voltage up to 550 volts and for any frequency from 25 to 60 cycles, also for two phase service.

**Direct Current** machine, Type 7HFD, can only be furnished for voltage as listed. Type 8HFD Buffer can be furnished for special higher voltage up to 550 volts.

**Regular Equipment**—Each of the above machines is supplied with reinforced feed cable and **Automatic Motor Starter**. Wheels furnished to order only.

# Single Spindle Polishing Machine

Ball Bearing Equipped



60 Cycle Alternating Current for Two and Three Phase  
Suitable for operating from power circuit lines only.

Type	Volts	H. P.	Speed, R. P. M. No Load	Length Spindle in Inches	Net Weight, Pounds
3 HAS "	220 v., 2 ph. 220 " 3 "	$\frac{1}{2}$	1750 or 3500	$8\frac{1}{2}$	83
4 HAS "	220 v., 2 ph. 220 " 3 "	1	1750 or 3500	$8\frac{1}{2}$	152

## Direct Current

3 HDS "	115 230	$\frac{1}{2}$	3000 or 3500	$8\frac{1}{2}$	80
4 HDS "	115 230	1	2100 or 3200	$8\frac{1}{2}$	152

The above machines are standard although not regularly carried in stock.

**Alternating Current** machines furnished only for 2 and 3 phase service as listed. They can be supplied for any voltage from 110 volts to 550 volts. Type 4HAS can be furnished for any frequency from 25 to 60 cycles.

**Direct Current** machines can be furnished for special voltage from 80 volts to 250 volts.

**Regular Equipment**—Each of the above machines is supplied with connector cable, regular taper hole in spindle and **Safety Motor Starter**.

**Special Equipment**—Spindles of sizes other than listed can be supplied. Column for floor mounting furnished when so desired.

## Tool Post and Angle Plate Grinders

Tool Post Grinders shown on pages 36 and 37.

Internal and External Grinders shown on pages 38 and 39.

Parallel or Angle Plate Grinders shown on pages 40 to 43.

**Adaptability** These machines are designed for use with Lathe, Planer, Milling Machine, Shaper, Boring Mill and many other special applications.

**Bearings** The proportionately large bronze bearing on wheel end of motor is cone shaped to such a degree affording delicate adjustment without danger of bearing freezing to shaft. Bearing adjustment and replacement can be effected in minimum time.

The commutator end bearing is a combination thrust and annular self adjusting ball bearing which holds the shaft in its natural position while adjusting front bearing for wear.

**Direction of Rotation** of all Grinders of above types is normally left-hand (anti-clockwise) when facing grinding wheel end. This, combined with the fact that the wheel arbor is made with right-hand thread, will cause any slippage of the grinding wheel on the shaft to tighten the nut.

The motors are designed to run in either direction; however, when reversed, extreme care should be taken to guard against the wheel nut working loose.

When so ordered, grinders can be supplied at standard price to run in right-hand direction (clock-wise) and in this way are made with left-hand thread on the wheel arbor.

**Safety First** Grinding wheel should always be securely fastened before starting to grind.

Vibration of the motor which will cause chatter and wave marks is generally caused by the grinding wheel being out of balance or too much play in wheel end bearing. For best results grinding wheel should be trued with a diamond point, which if clamped in a fixed position, will insure a well balanced wheel.

**Adjustment** To adjust bearing back out the two spreading screws two or three turns after which the compensating nut can be turned by means of pin to either loosen or tighten bearing. After necessary adjustment the two bearing spreading screws should be firmly screwed in position, insuring a full and uniform bearing at the same time just permitting the shaft to turn free.

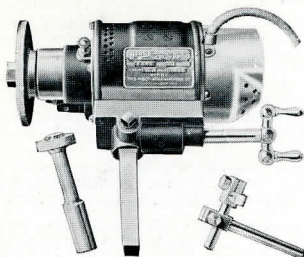
**Lubrication** Bearings should be lubricated frequently when machine is in constant use. They are protected with felt washers and lock nuts which should be firmly screwed in position when assembling the grinder after due care has been taken to have all parts of the tool free from dirt.

**Switch** Each machine is fitted with a quick acting switch, conveniently located.

**Grinding Wheels** regularly furnished with HISEY Electric Tool Post Grinders are of such grade and grain best adapted for general machine tool grinding. For best results it is necessary that the proper grade and grain of wheel is used, and if a description of the work is given we will gladly supply a wheel best suited for the purpose without extra charge.

## Tool Post Grinders

With Horizontal Slide Adjustment  
Equipped with Ball and Sleeve Bearings



### 60 Cycle Alternating Current for Single and Three Phase

Single phase machines are for connecting to lamp socket.

Three phase machines are for connecting to power lines.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheels in Inches	Size Tool Post Inches	Net Wgt. Lbs.
2 ASA	110 or 220	$\frac{1}{4}$	3400	6x $\frac{3}{8}$	$\frac{5}{8}$ x1	26
3 ASA	110 or 220	$\frac{1}{2}$	3400	8x $\frac{1}{2}$	$\frac{3}{4}$ x1 $\frac{1}{4}$	45

### Direct Current

2 ASD	115 or 230	$\frac{1}{4}$	4500	4 $\frac{1}{2}$ x $\frac{3}{8}$	$\frac{5}{8}$ x1	19
3 ASD	115 or 230	$\frac{1}{2}$	3000	8x $\frac{1}{2}$	$\frac{3}{4}$ x1 $\frac{1}{4}$	38

**Universal Motor Tool Post Grinders** will operate on alternating current and direct current of the same voltage. They are particularly adapted for 25 cycle single phase alternating current with effective grinding speeds not obtainable with induction type of motor at this low frequency.

2 ASU	115 or 230	$\frac{1}{4}$	Normal Load 4800	4x $\frac{3}{8}$	$\frac{5}{8}$ x1	19
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Above listed machines are standard and usually in stock.

**Alternating Current** grinders can be supplied to special order for any voltage from 80 volts to 250 volts and for any frequency from 40 to 60 cycles, also for two phase service.

**Direct Current** grinders furnished for 80 to 250 volts.

**Universal Motor** grinders furnished for 80 to 250 volts.

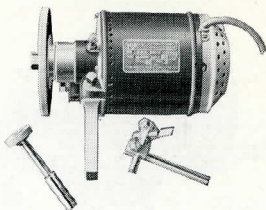
**Regular Equipment**—Same as listed on page 37.



## Tool Post Grinders

Without Slide Adjustment

Equipped with Ball and Sleeve Bearings



### 60 Cycle Alternating Current for Single and Three Phase

Single phase machines are for connecting to lamp socket.

Three phase machines are for connecting to power lines.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheels in Inches	Size Tool Post Inches	Net Wgt. Lbs.
2 AA	110 or 220	$\frac{1}{4}$	3400	6x $\frac{3}{8}$	$\frac{5}{8}$ x1	26
3 AA	110 or 220	$\frac{1}{2}$	3400	8x $\frac{1}{2}$	$\frac{3}{4}$ x1 $\frac{1}{4}$	45

### Direct Current

2 AD	115 or 230	$\frac{1}{4}$	4500	4 $\frac{1}{2}$ x $\frac{3}{8}$	$\frac{5}{8}$ x1	19
3 AD	115 or 230	$\frac{1}{2}$	3000	8x $\frac{1}{2}$	$\frac{3}{4}$ x1 $\frac{1}{4}$	38

**Universal Motor Tool Post Grinders** will operate on alternating current and direct current of the same voltage. They are particularly adapted for 25 cycle single phase alternating current with effective grinding speeds not obtainable with induction type of motor at this low frequency.

2 AU	115 or 230	$\frac{1}{4}$	Normal Load 4800	4x $\frac{3}{8}$	$\frac{5}{8}$ x1	19
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Above listed machines are standard and carried in stock.

**Alternating Current** grinders can be supplied to special order for any voltage from 80 volts to 250 volts and for any frequency from 40 to 60 cycles, also for two phase service.

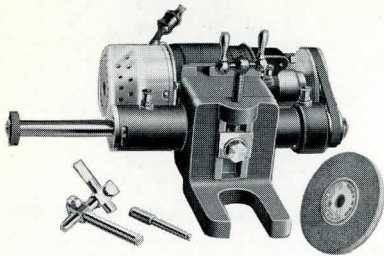
**Direct Current** grinders furnished for 80 to 250 volts.

**Universal Motor** grinders furnished for 80 to 250 volts.

**Regular Equipment**—Internal grinding attachment, tooth rest (cutter) grinding attachment, two grinding wheels, reinforced electrical cable with suitable attaching plug and operating switch.

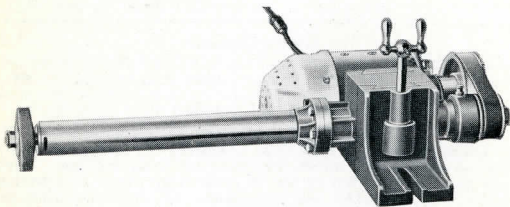
## Internal and External Grinders

These machines are designed for a wide range of accurate work. The (patented) design affords minimum mounting space thereby making both sizes adapted for use in small and large lathes.



**1/4 H. P. Size**  
**Types 2BXA and 2BXD**

This is exceedingly useful for general tool room work.  
General specifications on page 39.



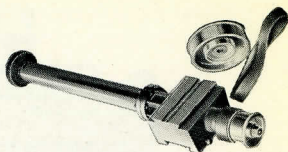
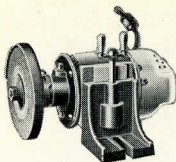
**1/2 H. P. Size**  
**Types 3BXA and 3BXD**

Adapted for heavy cylindrical and surface grinding.  
General specifications on page 39.

As the angle plate is fitted directly to the extension housing nearest the work shaft, a most rigid support is obtained. This design affords ample working space for the operator, giving full view and access to the work, as the motor is mounted in back of the extension spindle. The dove-tail engagement of the extension and motor housing permit the tightening or loosening of the belt by raising or lowering the motor. The angle plate fitted to the extension housing, permits vertical adjustment of the grinding wheel, operated by a handle conveniently located.

## Internal and External Grinders

Extension removed and angle plate fitted  
for external grinding



General Specifications  Equipment and Dimensions Dimensions given in inches	For Alternating Current 60 Cycle		For Direct Current	
	Type 3BXA 1½ H. P.	Type 2BXA ¼ H. P.	Type 3BXD 1½ H. P.	Type 2BXD ¼ H. P.
<b>For Internal Grinding</b>				
Size of Grinding Wheel.....	3½x½x½	1½x¾x¾	3½x½x½	1½x¾x¾
Standard extension will grind to a depth of.....	16	4	15	4
Smallest diameter hole that can be ground.....	2⅛	1⅜	2⅛	1⅜
Speed of extension at no load, R. P. M. ....	6000	9000	6000	10,000
Side Travel.....	4½	1¾	4½	1¾
Shortest distance from center of shaft to slot in angle plate.....	2 11/16	2 5/8	2 11/16	2 5/8
Net weight, in pounds.....	82	37	80	30
<b>For External Grinding</b>				
Size of Grinding Wheel.....	8x¾x5/8	6x¾x½	8x¾x5/8	4½x¾x½
Speed of Motor, no load, R.P.M.	3400	3500	3000	4500
Slide Travel.....	4½	1¾	4½	1¾
Shortest distance from center of shaft to slot in angle plate.....	5 1/16	4 5/8	4 9/16	3 7/8
Net weight, in pounds.....	52	28	50	22

**Alternating Current.** Combination internal and external grinders are standard with following motor specifications and usually carried in stock:

**Type 3BXA—½ H. P.**

110 volts, 60 cycle, 1 phase  
220 " 60 " 1 "  
220 " 60 " 3 "

**Type 2BXA—¼ H. P.**

220 volts, 60 cycle, 3 phase  
Not made for single  
phase service

Alternating Current grinders can be furnished for special voltage from 80 volts to 440 volts and for frequency (cycles) from 40 to 60 cycles, also for two phase service.

**Direct Current.** Combination grinders are usually carried in stock in the following standard voltages:

**Type 3BXD—½ H. P.**

115 volts and 230 volts

**Type 2BXD—¼ H. P.**

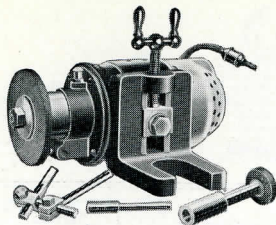
115 volts and 230 volts

Direct Current grinders can be furnished for special voltage from 80 volts to 250 volts.

## Parallel or Angle Plate Grinders

With Combination Vertical and Swivel Slide

Equipped with Ball and Sleeve Bearings



### 60 Cycle Alternating Current

Single phase machines are for connecting to lamp socket.

Three phase machines are for connecting to power circuit line wires.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheel in Inches	Net Weight, Pounds
2 BA	110 v., 1 ph.	$\frac{1}{4}$	3400	6x $\frac{3}{8}$	36
"	220 " 1 "				
"	220 " 3 "				

### Direct Current

2 BD	115	$\frac{1}{4}$	4500	4 $\frac{1}{2}$ x $\frac{3}{8}$	22
"	230				

**Universal Motor Grinders** will operate on alternating current and direct current of the same voltage. They are particularly adapted for 25 cycle single phase alternating current with effective grinding speeds not obtainable with induction type of motor at this low frequency.

2 BU	115	$\frac{1}{4}$	Normal Load 4800	4x $\frac{3}{8}$	27
"	230				

Above listed machines are standard and usually carried in stock.

**Alternating Current** grinders can be supplied to special order for any voltage from 80 volts to 250 volts and for any frequency from 40 to 60 cycles, also for two phase service.

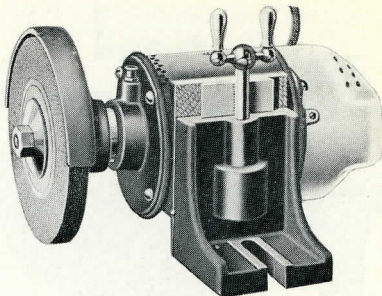
**Direct Current** grinders can be furnished for special voltage from 80 volts to 250 volts.

**Universal Motor** grinders can be furnished for special voltage from 80 volts to 250 volts.

**Regular Equipment**—Internal grinding attachment, tooth rest (cutter) grinding attachment, two grinding wheels, reinforced electrical cable with suitable attaching plug and operating switch.

## Parallel or Angle Plate Grinders

Equipped with Ball and Sleeve Bearings



### 60 Cycle Alternating Current

Single phase machines are for connecting to lamp socket.

Three phase machines are for connecting to power circuit line wires.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheel in Inches	Net Weight, Pounds
3 BA	110 v., 1 ph.	$\frac{1}{2}$	3400	8x $\frac{3}{4}$	60
"	220 " 1 "				
"	220 " 3 "				
4 BA	110 v., 1 ph.	1	1750	10x1	115
"	220 " 1 "				
"	220 " 3 "				

### Direct Current

3 BD	115	$\frac{1}{2}$	3000	8x $\frac{3}{4}$	55
"	230				
4 BD	115	1	2100	10x1	100
"	230				

Above machines are standard and usually carried in stock.

**Alternating Current** grinders can be furnished with motors for two phase service.

Type 3BA—Can be supplied for 40 and 50 cycle service and for voltage from 80 to 440 volts.

Type 4BA—Can be supplied for 25, 42 and 50 cycle service and for voltage from 80 to 550 volts.

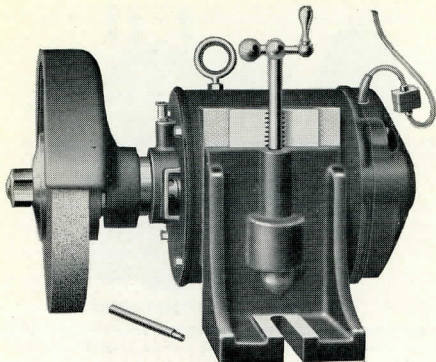
**Direct Current** grinders can be furnished for special voltage from 80 volts to 250 volts.

**Regular Equipment**—Each of the above machines is supplied with wheel guard, electric cable fitted with attaching plug, operating switch and grinding wheel of size as listed.



## Parallel or Angle Plate Grinders

Equipped with Ball and Sleeve Bearings



**Three Phase Alternating Current  
60 Cycle and 25 Cycle**

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheel in Inches	Net Weight, Pounds
6 BA "	220v., 60cy. 440 " 60cy.	3	1700	14x1 ½	280
6 BA "	220v., 25cy. 440 " 25cy.	3	1450	14x1 ½	285

### Direct Current

6 BD "	115 230	3	1600	14x1 ½	300
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The above listed machines are standard and usually carried in stock.

**Alternating Current** grinders can be supplied to special order for any higher voltage up to 550 volts, for any frequency (cycles) from 25 to 60 cycles and for two phase service.

**Direct Current** grinders can be supplied to special order for any higher voltage up to 500 volts.

**Regular Equipment**—Each of the above machines is supplied with grinding wheel, wheel guard, reinforced feed cable and operating switch. Direct Current grinders are also equipped with automatic motor starter.

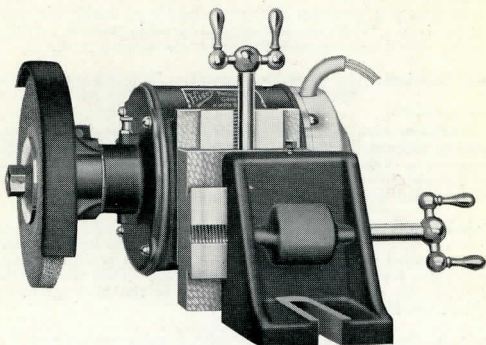
### General Service Recommendations

For heavy roll and surface grinding.

## Double Slide Grinders

**Equipped with Ball and Sleeve Bearings**

The slide travel vertically is  $5\frac{1}{2}$  inches and horizontally  $4\frac{3}{4}$  inches. Both slides operate independently which feature permits quick and accurate adjustment to the work.



### 60 Cycle Alternating Current

Single phase machines are for connecting to lamp socket.

Three phase machines are for connecting to power circuit line wires.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheel in Inches	Net Weight, Pounds
3 BWA	110v., 1 ph.	$\frac{1}{2}$	3400	$8 \times \frac{3}{4}$	68
"	220 " 1 "				
"	220 " 3 "				

### Direct Current

3 BWD	115 230	$\frac{1}{2}$	3000	$8 \times \frac{3}{4}$	63
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Above machines are standard and usually carried in stock.

**Alternating Current** grinders can be supplied to special order for any voltage from 80 to 440 volts, for any frequency from 40 to 60 cycles, also for two phase service.

**Direct Current** grinders can be furnished for special voltage from 80 volts to 250 volts.

**Regular Equipment**—Each of the above machines is supplied with wheel guard, electric cable fitted with attaching plug, operating switch and grinding wheel of size as listed.

## Portable Grinders and Buffers

shown and described on pages 45 to 47.

**Utility** These grinders are particularly adapted for use in machine shops, foundries, automobile factories and structural iron works. They are also used with special wheels for buffing and polishing and with wire brush wheels for cleaning castings. When not in use as a portable machine, Grinder can be placed in a suitable frame for sharpening tools.

**Ball Bearings** are used throughout. They are so mounted that Grinders can be operated with shafts in any position.

Machines with extended spindles are equipped with center bearing supports. The bearing nearest the grinding wheel is designed to take all working strains and stresses. All bearings are completely enclosed from dust and grit and where necessary are provided with felt protector washers.

**Lubrication** is one of the important features embodied in all HISEY Portable Grinders. The bearing housings are filled with a semi-fluid grease which provides proper lubrication for a period of several months. This construction obviates the old oil can method and is the best guarantee against bearing troubles.

**Switch** Each machine is fitted with a quick acting switch of such type best adapted for the current and size of grinder. They are most conveniently located in the motor frame and can be operated without losing grip of handle. All switches are completely enclosed to insure protection at all times, regardless of the position of the grinder.

**Spindles** are made of high-grade steel accurately ground. They are proportionately heavy and designed with arbor diameters of standard dimensions as recommended by the A. S. M. E. Extended spindle Grinders are made with a two-piece shaft mounted in a double set of Ball Bearings.

**Handles** are mounted in such a manner as proven best adapted for each size and style machine.

**Wheel Guards** are made to A. E. S. C. specifications. They are adjustable and can be placed at angle most convenient for the operator.

**Grinding Wheels** regularly furnished with HISEY Aerial Surface Grinders are of the grade and grain that our long experience has proven best adapted for each size and type machine. For best results it is necessary that the proper grade and grain of wheel be used, and if a description of the work is given we will gladly supply a wheel best suited for the purpose without extra charge.

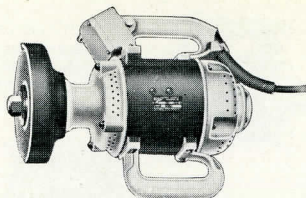
A wheel is most efficient when just soft enough not to glaze and hard enough not to wear away rapidly.

Use a coarse wheel for roughing, a fine grain wheel for finishing.

A good practice is to have several grades of wheels on hand best adapted for different classes of work.

## 1/4 H. P. Portable Grinders and Buffers

Ball Bearing Equipped



With 4-inch Extension and two Side Handles

### 60 Cycle Alternating Current

Single phase machines are for connecting to lamp socket.

Three phase machines are for connecting to power circuit line wires.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheel in Inches	Net Weight, Pounds
2 OA	110v., 1 ph.	1/4	3600	5x1/2	27
"	220 " 1 "				
"	220 " 3 "				

### Direct Current

2 OD	115 230	1/4	4500	4 1/2 x 1 1/2	18
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**Universal Motor Grinders** will operate on alternating current and direct current of the same voltage. They are particularly adapted for 25 cycle single phase alternating current with effective grinding speeds not obtainable with induction type of motor at this low frequency.

2 OU	115 230	1/4	Normal Load 4800	4 1/2 x 1 1/2	18
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Above listed machines are standard and usually carried in stock.

**Alternating Current** grinders can be supplied to special order for any voltage from 80 volts to 250 volts, and for any frequency from 40 to 60 cycles, also for two phase service.

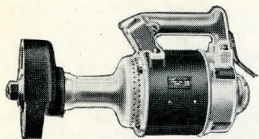
**Direct Current** grinders can be furnished for special voltage from 80 volts to 250 volts.

**Universal Motor** grinders can be furnished for special voltage from 80 volts to 250 volts.

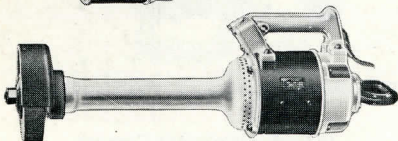
**Regular Equipment**—Grinding wheels as listed, wheel guard, reinforced electrical cable and attaching plug.

## 1/2 H. P. Portable Grinders and Buffers

Ball Bearing Equipped



Types 3 OA and 3 OD  
With 5-inch extension  
and top handle



Types 3 OXA and 3 OXD  
With 12-inch extension and top and end handles

### 60 Cycle Alternating Current

Single phase machines are for connecting to lamp socket.  
Three phase machines are for connecting to power circuit line wires.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheel in Inches	Net Weight, Pounds
3 OA	110v., 1 ph.	1/2	3500	6x1 1/4	47
"	220 " 1 "				
"	220 " 3 "				
3 OXA	110v., 1 ph.	1/2	3500	6x1 1/4	58
"	220 " 1 "				
"	220 " 3 "				

### Direct Current

3 OD	115 230	1/2	3300	6x1 1/4	33
3 OXD	115 230	1/2	3300	6x1 1/4	42

Above listed machines are standard and usually carried in stock.

**Alternating Current** grinders can be supplied to special order for any voltage from 80 volts to 250 volts, and for any frequency from 40 to 60 cycles, also for two phase service.

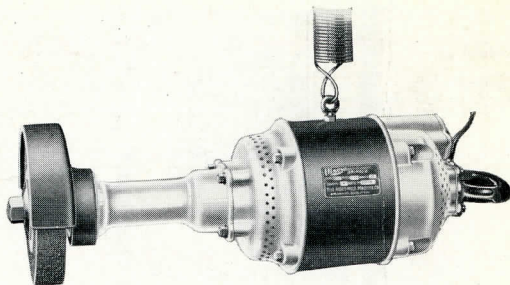
**Direct Current** grinders can be furnished for special voltage from 80 volts to 250 volts.

**Regular Equipment**—Grinding wheel as listed, wheel guard, reinforced electrical cable and attaching plug.



# 1 H. P. Portable Grinders and Buffers

## Ball Bearing Equipped



With 9-inch Extension and with End Handle

### 60 Cycle Alternating Current

Single phase machines are for connecting to lamp socket.

Three phase machines are for connecting to power circuit line wires.

Type	Volts	H. P.	Speed, R. P. M. No Load	Size Wheel in Inches	Net Weight, Pounds
4 OXA	110v., 1 ph.	1	3400	8x1½	77
“	220 “ 1 “				
“	220 “ 3 “				

### Direct Current

4 OXD	115 230	1	3000	8x1½	75
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Above listed machines are standard and usually carried in stock.

**Alternating Current** grinders can be supplied to special order for any voltage from 80 volts to 250 volts and for any frequency from 40 to 60 cycles, also for two phase service.

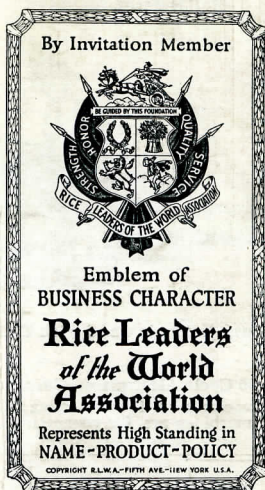
**Direct Current** grinders can be furnished for special voltage from 80 volts to 250 volts.

**Regular Equipment**—Grinding wheel as listed, wheel guard, reinforced electrical conductor cable with attaching plug and suspension spring.

### General Service Recommendations

Adapted for heavy duty service in Foundries, Railroad Shops and other industries requiring a powerful, compact and sturdy machine for grinding and buffing and scratch brush work.

**"Hisey"**



HISEY Products are protected by many patents allowed and pending.

HISEY Portable Electric Tools are the acknowledged standard of highest quality. The foremost engineering principles are carried out in every detail which superior construction is proof of the lasting qualities of HISEY Products.

They are guaranteed to develop rated capacity and to be free from imperfections in workmanship and material.

All machines will operate successfully on any voltage within five per cent above or below the name-plate rating. Specifications conform to the standards of The Electric Power Club of which we are a member.

More details of any type machine furnished on request.

## In Ordering

machines for operation on Alternating Current, always give voltage, cycles and phase. NOTE—The lighting circuit line or lamp socket voltage is usually less than the power circuit voltage.

For Direct Current machines, give voltage when ordering.

Printed in U. S. A.